RAPP Australia Pty Ltd
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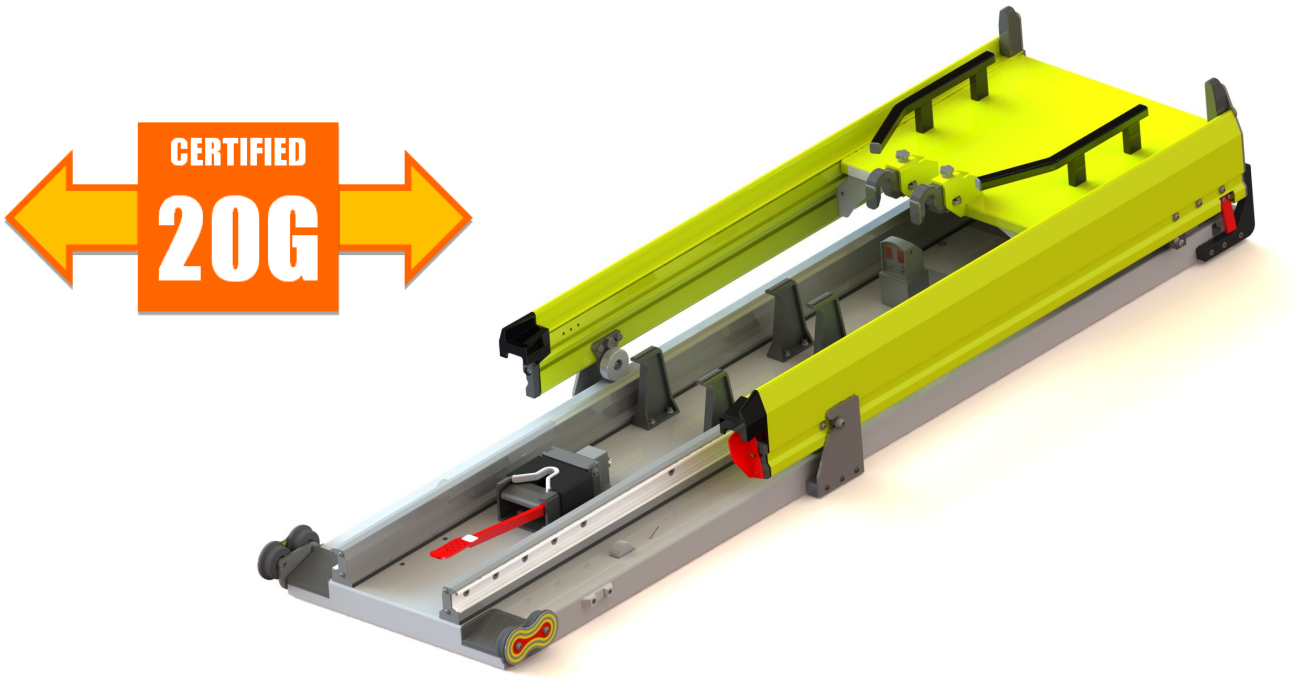
INSTRUCTION MANUAL

BRAVO 1 RAIL



Read these maintenance instructions before using the product and keep them for future reference.

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INTRODUCTION

1.1.- Foreword

The BRAVO rail has been solely designed for perfectly holding the KARTSANA “BRAVA” stretcher model.

The Bravo rail has been tested in conformity with the regulation AS/NZS 4535:1999.

All the information regarding treatment, disinfection and maintenance is indicated, taking into consideration our current experience and expertise.

We reserve the right to change the specifications of the BRAVO rail for the improvement of the products.

1.1.- Responsibility and warranty

The stretcher must be checked at the time of its delivery to the organisation. All its functions must be explained in detail. The organisation must take charge of teaching all its employees how to use it correctly.

The product has a 36 month warranty from the delivery date to the end user (see the Warranty terms and conditions and the Warranty Certificate which is supplied with the product).

The warranty does not cover defects resulting from incorrect installation, misuse or improper use of the stretcher. All repairs must be made by a technician authorized by Kartsana or RAPP Australia P/L.

The manufacturer will not be liable for any anomaly caused to the stretcher due to using any products other than original Kartsana products.

Other warranty clauses, see the Warranty Terms and Conditions that are supplied with the product.

1.2.- Attention

Identifies Information on important safety measures for the correct use of the stretcher, in order to prevent accidents.

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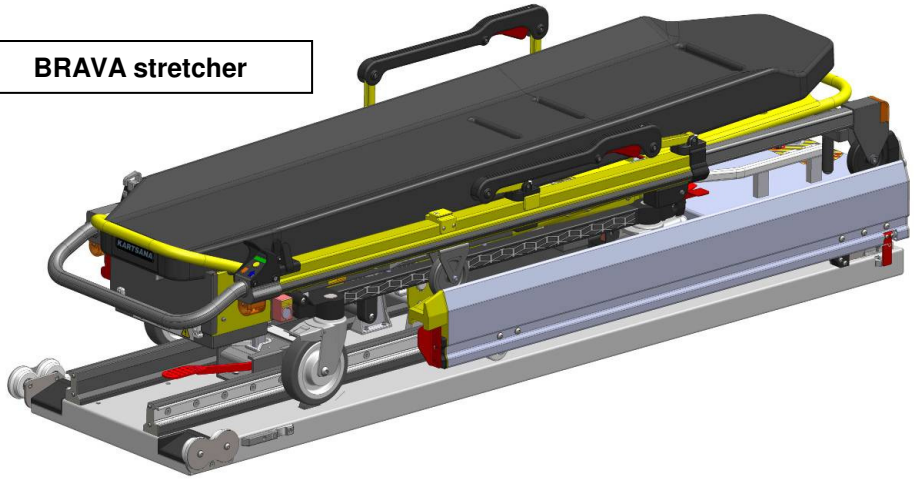
2.- INSTRUCTION MANUAL

Only the BRAVA stretcher may be put on the BRAVO rail.

BRAVA stretcher



To reduce the risk of injuries to the patient and accompanying persons in the event of an accident, it is advisable to avoid sharp edges and projecting items inside the ambulance, paying special attention to the areas nearest the BRAVO 1 rail.

Make sure that no damage is caused to the areas containing the stretcher mechanisms, to prevent them from malfunctioning.

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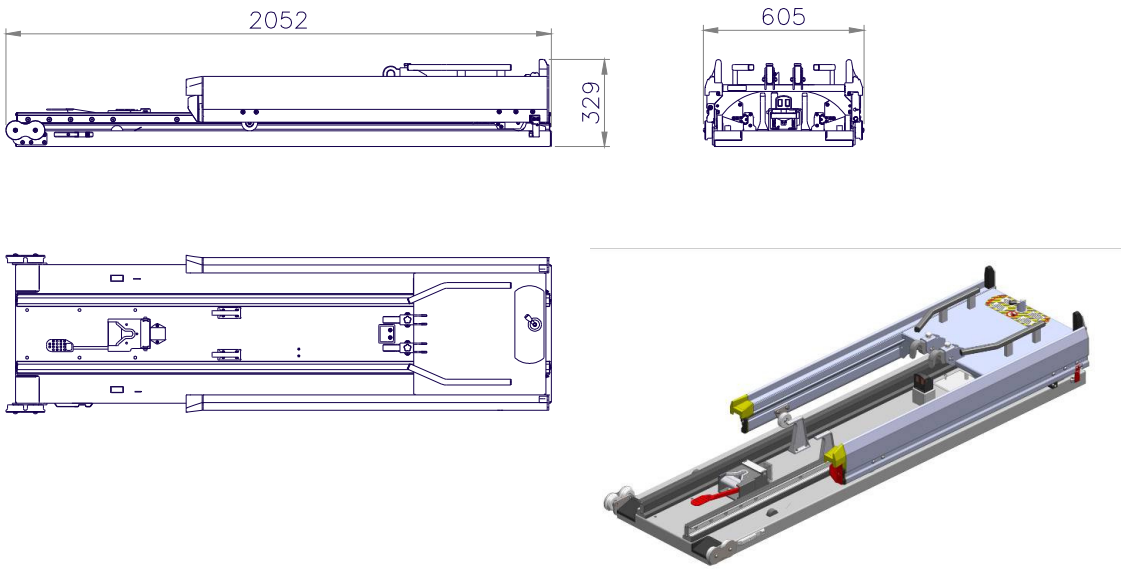
2.1.- Technical characteristics

Approximate rail weight 95 Kg

Maximum load permitted: 320 Kg.

Approximate measurements of the stretcher (in mm.) based on the drawing below.



2.2.- Rail operation and usage

To prevent injuries to limbs and other body parts, make sure they are not within the range of the rail and/or moveable parts.

2.2.1.- Red charging trigger

Stretcher lock on the rail

Place the stretcher in front of the rail.

Place the small wheels of the stretcher on the rail cross section. This should be in the exterior position. Position the stretcher onto the rail so that the small wheels of the stretcher are guided by the rail, until the limit is reached at the edge of the cross section.

Press the arrow to raise the stretcher legs until the end of its run. (If this action has been carried out correctly the front axis should be within the inner part of the hooks.

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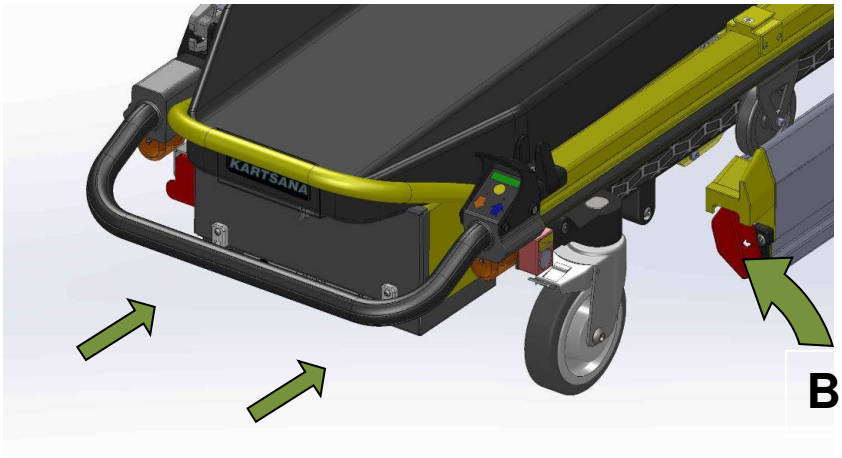
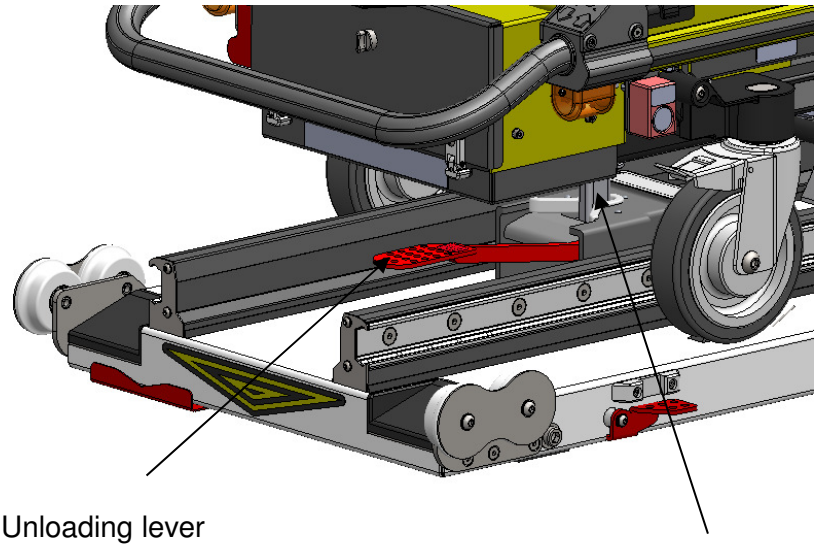
Below. Press the red lever “B” at the front right of the rail to unlock the mechanism and to push the stretcher towards the inside until the limit has been reached.



Below. To be sure that the stretcher rail is correctly located ensure that the unload lever is in the horizontal position. Identified is the 3rd secure point locked in its compartment.



Unloading lever

3rd secure point

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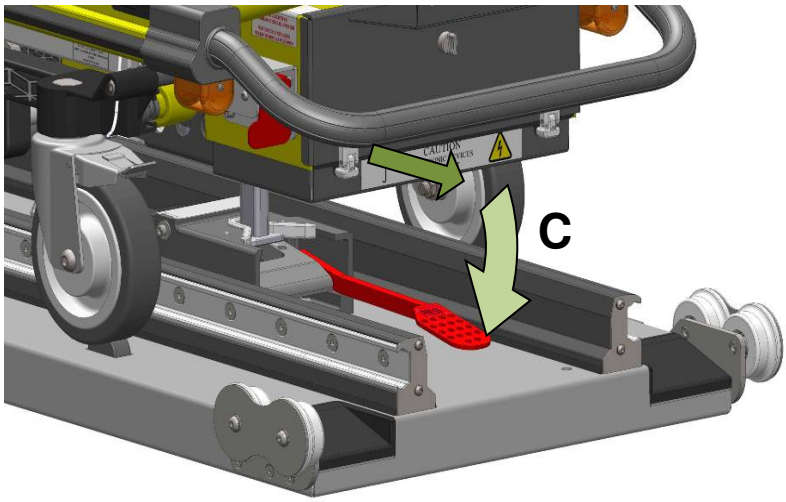
2.2.2.- Unloading lever.

Push down the unloading lever “C” located between the guides at the front of the rail as shown in the figure below. While maintaining the lever in this position, pull the stretcher towards the outside of the ambulance until the mechanical limit has been reached. Once the rail is fully extended we will be able to open out the stretcher legs by pressing the arrow ⇧ .

Once the electric stretcher has been raised above the rail level it can be withdraw.

⚠ To prevent injuries to limbs and other body parts, make sure they are not within the range of the rails moveable parts.

Note: The rear part of the rail corresponds to the part where the rail start lever is located.



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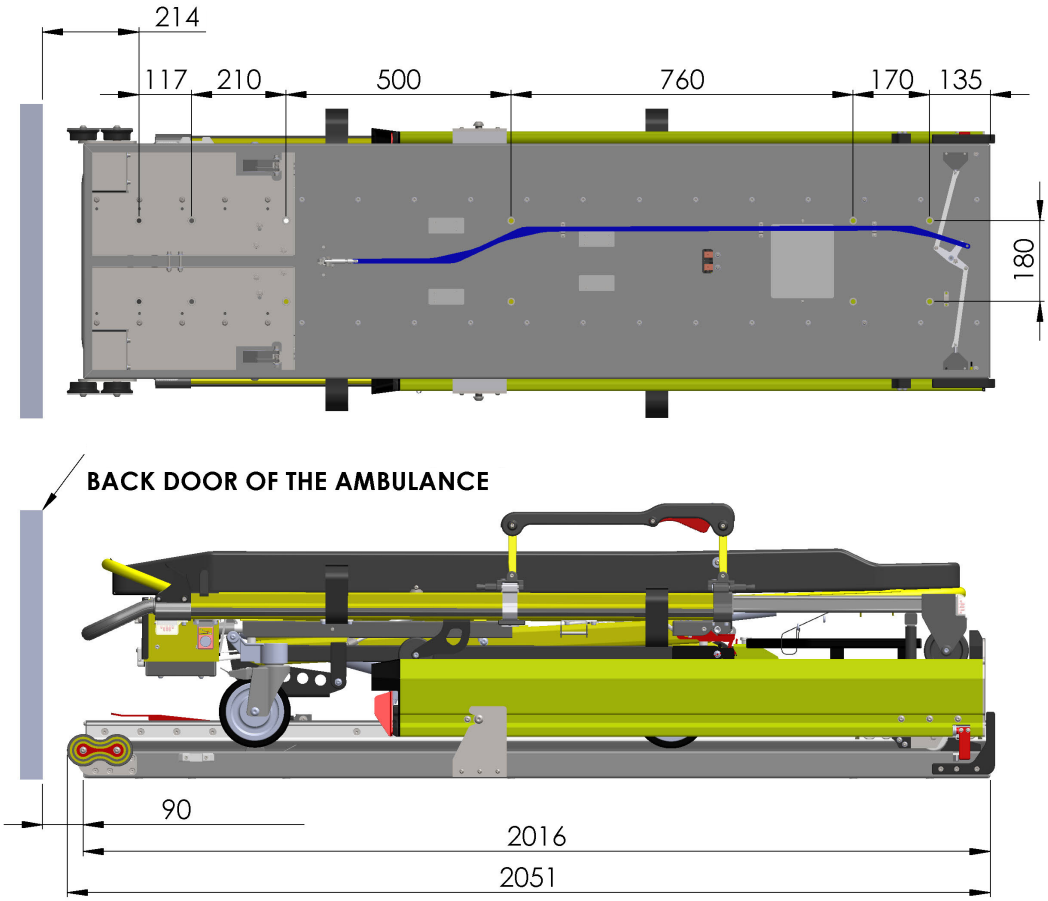
3.- Installation of the rail in a Sprinter ambulance

3.1.- Setting the rail in the ambulance

The Bravo 1 rail must be secured to the ambulance using 12 screws DIN 912 M10 – 10.9.

The drilling situation is as follows:



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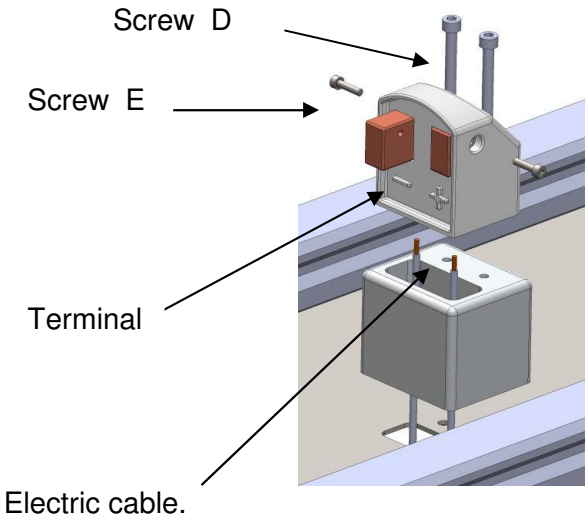
3.2.- Electrical connection

The electronics is prepared to emit a current of 12 V.

Prior to fixing the stretcher pass the cables that charge the stretcher through the small window where the plug charger is housed. The BRAVO rail must be connected to the electrical network of the vehicle using 4mm electric cable as a minimum (paying special attention to the poles + o -).

The aim of this connection is that the Brava stretcher charges the stretcher batteries when it is inside the ambulance with the rail closed and the third position lever in horizontal position.

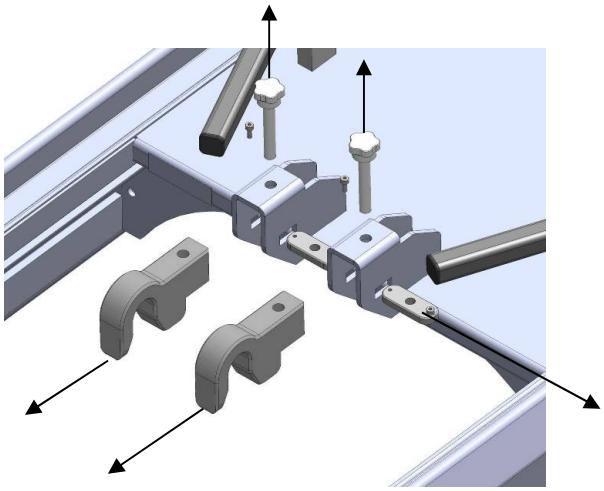


We recommend that the wire be externally protected with a plastic cover to prevent electrical issues

To protect the electrical system by the use of a 20A-32A fuse.

To make the electrical connection it is necessary to remove the charger outlet box with screws “D” and then using the screw terminals “E” fix the

In case the electric stretcher stops working, remove the rail hooks according to the sketch below, remove the stretcher and replace said hooks in their original position.



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4.- CLEANING

When cleaning the loading rail, use products that will not damage the surface of the materials and wipe with a cloth or something similar. If the surface to be cleaned/disinfected is greased, re-greased it after cleaning/disinfecting it.

All disinfectants must be used in accordance with the manufacturer's instructions.

The manufacturer will not be held responsible for any anomaly or damage caused by using a cleaning product that could damage the surface of the rail materials.

For hygienic purposes and proper protection of the products component, the manufacturer recommends that they be cleaned/disinfected after each use.

5.- MAINTENANCE

Every six months check and lubricate the interior of the side guides as well as the locking system. We recommend that maintenance be performed by a specialist from RAPP Australia P/L or an authorised service agent, every six months. During this inspection, a general check will be made to replace any parts that could be damaged or worn due to use.

The rail should be regularly greased (approximately every two months) with oil or lubricant to protect it against corrosion and external agents (such as salt and sanitizer) and also to provide a proper guide way system movement. For example, you can use WD-40 without silicone.

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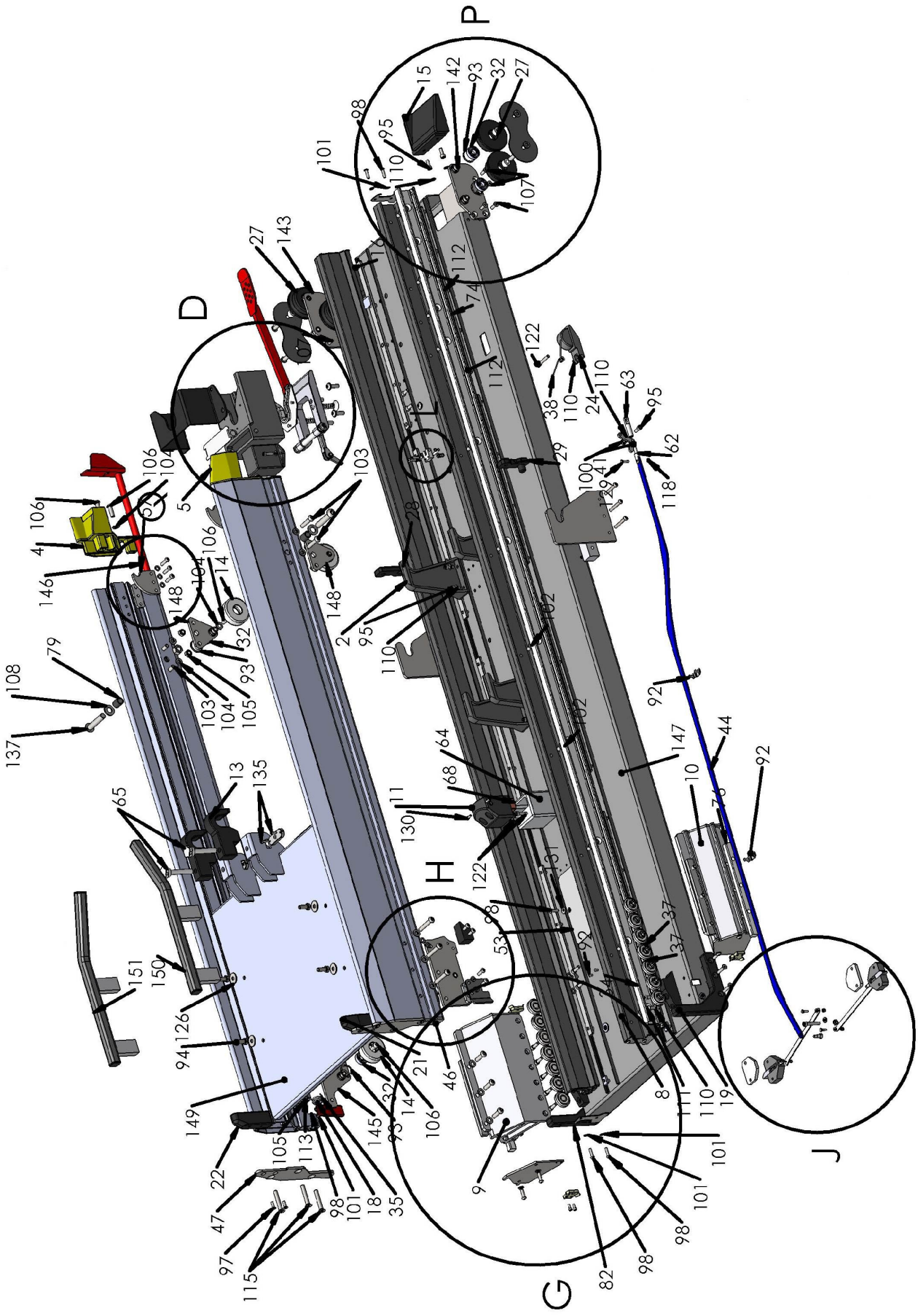
5.- BRAVO-1 EXPLODED WIEW



Rev. 1
16-07-1 .

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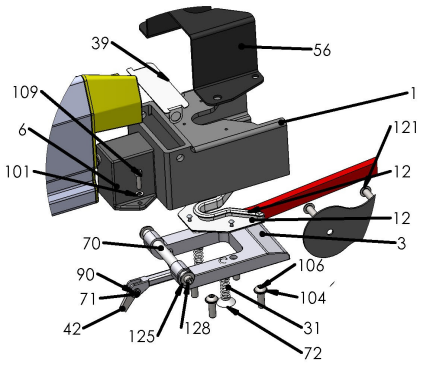
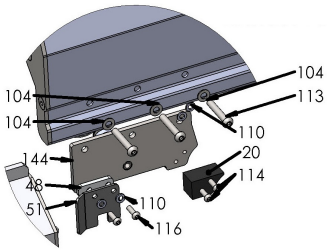
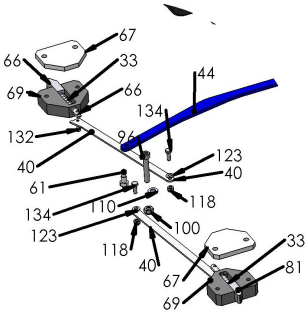


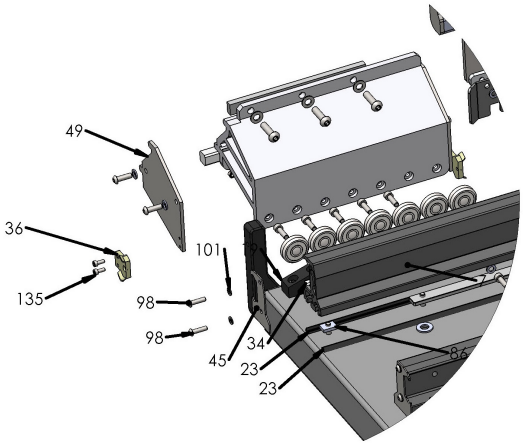
DETALLE D
ESCALA 1 : 5



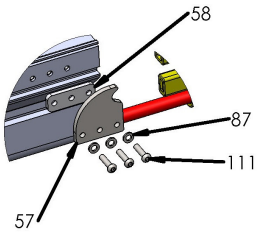
DETALLE H
ESCALA 1 : 5



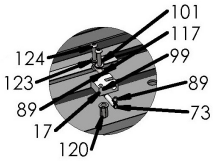
DETALLE J
ESCALA 1 : 5



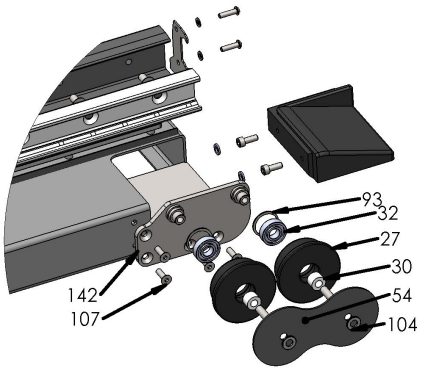
DETALLE G
ESCALA 1 : 5



DETALLE Q
ESCALA 1 : 5



DETALLE L
ESCALA 1 : 5



DETALLE P
ESCALA 1 : 5

N.º	REFERENCE	DESCRIPTION	QUAN.
1	01-0215-001	THIRD POINT CASTING BRAVO	1
2	01-0231-002	SHORT HOOK MIDDLE BRAVO	4
3	01-0236-001	THIRD POINT LOCK BRAVO	1

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4	01-0252-001	IN LEFT RAMP	1
5	01-0253-001	IN RIGHT RAMP	1
6	01-0254-001	PROTECTION INTERIOR MECHANISM	1
7	03-0879-001	GUIDE PROFILE	1
8	03-0880-001	LEFT GUIDE PROFILE	1
9	03-0889-004	RIGHT REAR PROFILE CLAMP	1
10	03-0890-004	LEFT REAR PROFILE CLAMP	1
11	05-0229-002	CHARGER CONNECTOR	1
12	05-0230-001	LOADER CONNECTOR BRAVO	1
13	05-0239-001	BRAVO HOOK	2
14	05-0249-001	RAIL GUIDE WHEEL BRAVO	4
15	05-0250-001	IN LEFT RAMP	1
16	05-0251-001	IN RIGHT RAMP	1
17	05-0268-001	BASE AXIS HANDLE BRAVO	1
18	05-0298-002	LEVER STOPPER NYLON SPACER SHELL BRAVO	1
19	05-0299-001	FRONT WHEEL LIMIT	2
20	05-0300-001	REAR WHEEL LIMIT	2
21	05-0301-001	RIGHT TOP RAIL	1
22	05-0302-001	LEFT TOP RAIL	1
23	05-0303-001	RUBBER PROFILE	4
24	05-0310-001	RIGHT WHEEL ANTI-PIVOTING BRAVA REAR WHEELS	1
25	05-0311-001	LEFT WHEEL ANTI-PIVOTING BRAVA REAR WHEELS	1
26	05-0312-001	LIMIT LATERAL RAIL	1
27	05-0318-002	WHEEL GUIDE RAIL	4
28	05-0324-001	REAR CASTING BRAVO ENTRANCE	1
29	05-0325-001	REAR CASTING CLAMP BRAVO ENTRANCE	1
30	05-0329-001	NYLON DISTANCER	4
31	09-0006-001	SPRING HEADEST	2
32	09-0070-001	BEARING - 6001Z	8
33	09-0128-001	SPRING SHAFT S-400; 860	2
34	09-0210-001	RAIL GUIDE	2
35	09-0213-002	WHARF OF TWIST	1
36	09-0214-001	PROFILE SCRAPER WCST43	4
37	09-0218-001	BEARING ROLLON CPN 43 2Z	14
38	09-0219-001	TRIGGER SPRING SEPARATOR	2
39	11-0600-001	COVER FOR BRAVO SHAFT 3 ° POINT.	1
40	11-0612-001	LOCKING SYSTEM HANDLE	2
41	11-0635-002	BRAVO HANDLE LEVER PLATEN	1
42	11-0637-001	BRAVO HANDLE SMALL PLATEN	1
43	11-0640-001	BRAVO HANDLE GUIDE PLATE	4
44	11-0646-001	BRAVO SPECIAL LONG BRACE	1
45	11-0699-001	COVERS PROFILE GUIDES	4
46	11-0702-001	RIGHT COVERS PROFILE GUIDES	1
47	11-0703-001	LEFT COVERS PROFILE GUIDES	1
48	11-0704-001	PLATES FINAL POSITION	1
49	11-0705-002	PROFILE COVER UNION	4

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50	11-0718-003	PLATES FOR BLOCKADE RAIL	1
51	11-0719-002	PLATE FOR BLOCKADE RAIL	1
52	11-0720-001	SPECIAL NUT FOR HOOK	2
53	11-0756-001	COVER CONNECTOR BRAVO2	1
54	11-0767-001	SUPPORT PLATE WHEELS	2
55	11-0776-001	CENTRAL HOOKING PLATE BRAVO1 20G	2
56	11-0777-001	THIRD POINT FOUNDRY BACKING PLATE BRAVO	1
57	11-0781-001	BACKING FIX INTERNAL PLATE BRAVA 20G	2
58	11-0783-001	INTERIOR BACKING THREADED THICK BRAVA 20G	2
59	11-0785-001	STOPPER HOOK THREADED FIX PLATTEN 20G	4
60	11-0884-001	INTERIOR BACKING THREADED THICK BRAVA 20G	2
61	12-0188-001	LEVER SCREW S-860	1
62	12-0232-001	TENSATOR SHACKLE	1
63	12-0233-001	LONG BRACE TENSATOR	1
64	12-0277-001	BRAVO PLUG BASE	1
65	12-0288-001	BRAVO ANCHORING KNOB	2
66	12-0291-001	BRAVO SQUARE LUG	1
67	12-0292-001	SPECIAL LUG SUPPLEMENT	2
68	12-0296-001	BRAVO MASSIF COPPER CONNECTOR	2
69	12-0300-001	PIN LINEAR GUIDE	2
70	12-0304-002	SHAFT STOPPER BRAVO 3° POINT	1
71	12-0305-001	TRIGGER SHAFT RING	1
72	12-0313-002	BRAVO SCREW FIXER	2
73	12-0330-001	BRAVO BASE LEVER AXIS	1
74	12-0360-001	PLATE FIXING SCREWS	2
75	12-0361-001	PLATE FIXING PROFILE	2
76	12-0370-001	PLATE FIXING	2
77	12-0405-001	PLATE FIXING	6
78	12-0412-001	END BACKING BRAVO 1 20G	1
79	12-0413-001	SECOND STOP BOLT 20G	2
80	12-0414-001	SECURING HOOK BRAVO 1 20G	2
81	12-0493-001	RECTANGULAR BOLT.LEFT. BRAVO	1
82	12-0500-001	BUMPER REINFORCEMENT FINAL BRAVO 1 20G	1
83	13-0108-001	DIN 7380 ULS M6x45 -10.9 GALVANISED	6
84	13-0177-001	M6 SELF-LOCKING NUT	6
85	13-0186-001	M12 HEXAGONAL NUT GALVANISED	2
86	13-0193-001	M6 RECTANGULAR NUT	2
87	13-0207-001	D6 WASHER GALVANISED	12
88	13-0210-001	D10 WASHER GALVANISED	2
89	13-0213-001	ELASTIC RING EXT. ø6 GALVANIZED	2
90	13-0215-001	ELASTIC RING EXT. ø8GALVANIZED	2
91	13-0308-001	RIVET 3X10	3
92	13-0318-001	STAINLESS STEEL RIVET 4X12	6
93	13-0326-001	ELASTIC RING INT. D.28	8
94	13-0344-001	SCREW HEXAG. DIN 933 M8X20 6.8 GALVANIZED	4
95	13-0351-001	STAINLESS SCREW ALLEN DIN 912 M6X16	21

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96	13-0352-001	STAINLESS SCREW ALLEN DIN 912 M6X35	1
97	13-0353-001	STAINLESS SCREW DIN 7991 - M5 x 16	4
98	13-0355-001	STAINLESS SCREW ALLEN DIN 7380 ULS M5X20 -10.9	12
99	13-0356-001	LOCKING NUT M5	4
100	13-0357-001	LOCKING NUT M6	16
101	13-0360-001	WASHER d 5 GALVANIZED	19
102	13-0362-001	SCREW DIN 7991 - M8 x 16 GALVANIZED	24
103	13-0364-001	SCREW DIN 7380 ULS M8x40 -10.9 GALVANIZED	4
104	13-0365-001	WASHER d8 GALVANIZED	56
105	13-0366-001	LOCKING NUT M8	16
106	13-0367-001	DIN 7380 ULS M8x25 -10.9 GALVANIZED	13
107	13-0368-001	SCREW DIN 7991 - M6 x 20 GALVANIZED	10
108	13-0369-001	ARANDELA d12 INOX	2
109	13-0371-001	ALLEN DIN 912 M5X20 - 8.8 INOX.	4
110	13-0372-001	WASHER d6 GALVANIZED	104
111	13-0373-001	SCREW DIN 7380 ULS M6x25 -10.9	9
112	13-0374-001	SCREW DIN 7380 ULS M8x20 -10.9 GALVANIZED	13
113	13-0375-001	SCREW DIN 7380 ULS M8x50 -10.9 GALVANIZED	6
114	13-0376-001	SCREW DIN 7380 ULS M6x40 -10.9 GALVANIZED	4
115	13-0377-001	SCREW DIN 7991 - M8 x 50 TODO ROSCA GALVANIZED	6
116	13-0378-001	SCREW DIN 7380 ULS M6x20 -10.9 GALVANIZED	14
117	13-0379-001	SCREW DIN 7380 ULS M5X16 -10.9 GALVANIZED	1
118	13-0380-001	LOCKING NUT M4	5
119	13-0381-001	SCREW DIN 7380 ULS M6x35 -10.9 GALVANIZED	2
120	13-0382-001	VALONA HEXAGONAL M5	6
121	13-0383-001	SCREW DIN 7380 ULS M8x30 -10.9 GALVANIZED	10
122	13-0385-001	SCREW ALLEN DIN 912 M6X40 - 8.8 GALVANIZED	6
123	13-0386-001	WASHER d4 GALVANIZED	7
124	13-0387-001	SCREW DIN 7380 ULS M4X20 -10.9 GALVANIZED	2
125	13-0388-001	WASHER WIDE d6 GALVANIZED	2
126	13-0390-001	WASHER WIDE d8 GALVANIZED	4
127	13-0391-001	ALLEN DIN 912 M6X20 - 8.8 GALVANIZED	38
128	13-0392-001	ALLEN DIN 912 M6X14 - 8.8 GALVANIZED	2
129	13-0393-001	TORNI. HEXAG. DIN 933 M4X16 6.8 GALVANIZED	1
130	13-0394-001	ALLEN DIN 912 M4X12 - 8.8 GALVANIZED	2
131	13-0395-001	WASHER WIDE d 5 GALVANIZED	2
132	13-0396-001	SCREW ALLEN DIN 912 M3x12 - 8.8 GALVANIZED	2
133	13-0397-001	LOCKING NUT M3	2
134	13-0398-001	SCREW. HEXAG. DIN 933 M4X12 6.8 GALVANIZED	2
135	13-0399-001	SCREW ALLEN DIN 912 M4X10 - 8.8 GALVANIZED	12
136	13-0440-001	ZINC-COATED ALLEN COUNTERSUNK DIN 7991 - M6 x 25	6
137	13-0474-001	DIN 7380 ULS M12x25 -10.9 GALVANISED	2
138	14-0030-001	SERIE LABEL	1
139	14-0123-001	PRESS LABEL	1
140	50-0393-003	LEVER TO UNPIN	1
141	50-0421-001	LOCK WELDING PLATE BRAVO	1

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142	50-0446-002	BRAVO LEFT ENTRY WELDING GUIDE	1
143	50-0447-002	BRAVO RIGHT ENTRY WELDING GUIDE	1
144	50-0448-002	RIGHT REAR WHEEL SUPPORT	1
145	50-0449-002	RIGHT REAR WHEEL SUPPORT	1
146	50-0452-004	WELDED PIPE HANDLE	1
147	50-0486-001	STAINLESS STEEL WELDING PLATE BRAVO 20G	1
148	50-0487-001	WHEEL AXIS WELDING BRAVO	2
149	50-0516-001	WELDING PROFILES GROUP BRAVO	1
150	52-0530-001	RIGHT RAIL BRAVO	1
151	52-0531-001	LEFT RAIL BRAVO	1

i. The items/parts that start with this number 13-xxxx-xxx are elements of fixation/securing.

ii. The items/parts that start with this number 50-xxxx-xxx are welding sets and will be supplied as an inseparable set, not a loose parts.

iii. The items/parts that start with this number 52-xxxx-xxx are preassemblies. In case of requiring some items/parts that belong to a preassembly, contact our technical services at RAPP Australia P/L with the part number, and if necessary the exploded view as provided.